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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
GAMETT, DANIEL C	

ART UNIT	PAPER NUMBER
1647	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/817,607	FRANCO ET AL.	
	Examiner	Art Unit	
	Daniel C. Gamett, PhD	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *41-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *41-50 and 55-60* is/are allowed.

6)☒ Claim(s) *51-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/12/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The amendments of 02/15/2007 have been entered in full. Claims 1-40 are cancelled. Claims 41-60 are under examination.

2. All prior objection/rejections not specifically maintained in this office action are hereby withdrawn.

3. As point of clarification, the Examiner points out that claim 38 had been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for reciting dependency from itself. Corresponding new claim 58 clearly recites dependency from claim 57, and so the rejection of record does not apply to the new claim. In the remarks filed 02/15/2007, Applicants inexplicably construed the rejection as having something to do with the terms "nucleic acid molecule" and "polynucleotide". Applicants then assert that new claims 41-60 substitute the "isolated polynucleotide" phrase with the phrase "isolated nucleic acid molecule" in each instance in order to maintain proper antecedent basis. This substitution does not seem have actually been done (see claim 42, for example). Nevertheless, although consistency of terminology is generally preferable, the interchangeable recitation of "nucleic acid molecule" and "polynucleotide" in these claims does not seem to introduce any lack of clarity. Thus, it is agreed that one skilled in the art would readily recognize "nucleic acid molecule" and "polynucleotide" as being synonymous in the context of these claims.

Claim Objections

4. Claim 51 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel

the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The polynucleotides of claim 51 are recited to be 95.0% identical to a polynucleotide sequence provided in claim 41, which in turn, recites polynucleotides encoding a polypeptide comprising amino acids 1-506 or 2-506 of SEQ ID NO:2. The polynucleotides of claim 41 are limited to the variants of SEQ ID NO:1 permitted by the degeneracy of the genetic code. The polynucleotides of claim 52 are not so limited, however, because they are not required to code for a polypeptide. So, for example, a single C to A change at position 12 of SEQ ID NO:1 would terminate translation; the resultant polynucleotide would meet all of the percent identity and hybridization limitations of claim 51 but would not encode either of the polypeptides recited in claim 41. Therefore, it would be possible to infringe claim 51 without infringing claim 41.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 51 and 52 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the

claimed invention. The polynucleotides of claim 51 are recited to be 95.0% identical to a polynucleotide sequence provided in claim 41, which in turn, recites polynucleotides encoding a polypeptide comprising amino acids 1-506 or 2-506 of SEQ ID NO:2. While the polynucleotides of claim 41 are limited to the variants of SEQ ID NO:1 permitted by the degeneracy of the genetic code, the polynucleotides of claim 52 are not so limited. Therefore, the genus of polynucleotides in claim 51 is described only by a partial structure in the form a percentage of sequence identity. There is not even identification of any particular portion of the structure that must be conserved. The hybridization limitation in the claim does not appreciably reduce the size of the encompassed genus, because all but the shortest oligonucleotides that are 95% identical to any portion of the reference sequence would hybridize under the recited conditions. Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus.

7. The polynucleotides of claim 52 encode a polypeptide that is at least 95.0% identical to SEQ ID NO:2. Thus, the claimed polynucleotides are not 95% identical to a limited set of described polynucleotides, but instead their variability is defined by the genus of encoded polypeptides. A full calculation of the number of unique polypeptides that are 95% identical to a 506 residue amino acid sequence is beyond the capability of the resources readily available to the examiner (Handheld calculators will not calculate intermediate values such as 506 factorial). However, the calculated number would be several orders of magnitude higher than 1.7×10^{16}, which is the number of unique sequences that are 95% percent identical to a 100 amino acid sequence. This estimate only includes the 95% identity population—it

ignores sequences of 94%, 93%, and etc. identity. It also ignores deletions that may preserve identity without substituting an amino acid. Therefore, Applicants' argument that the specification explicitly discloses over 52 or 54 individual species, i.e. 26 or 27 N-terminal and 26 or 27 C-terminal deletion mutants that are 95% identical to amino acids 2 to 506 or 1-506 of SEQ ID NO:2 is not persuasive with regard to description of the genus of polypeptides encompassed by the claim. Furthermore, although the specification establishes that HBMYP2X7v mRNA expression generally parallels that of P2X7, this does not define a function that could be coupled with sequence identity to describe variants of HBMYP2X7v polypeptides. Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the genus of polypeptides recited in the claim. As the genus of encoded polypeptides is not described, the genus of encoding polynucleotides recited in claim 52 is likewise not described.

8. *Vas-Cath Inc. v. Mahurkar*, 19USPQ2d 1111, clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See *Vas-Cath* at page 1116).
9. With the exception of SEQ ID NO: 1, the skilled artisan cannot envision the detailed chemical structure of the encompassed polynucleotides, and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity

of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required. See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016.

10. One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483. In *Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

11. Therefore, only isolated polynucleotides comprising the nucleotide sequence set forth in SEQ ID NO: 1, but not the full breadth of the claim meets the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

12. Claims 53 and 54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The basis for this new matter rejection remains the same as it was applied to claims 33 and 34 in the previous office action. Applicants' arguments filed 02/15/2007 have been fully considered but they are not persuasive. Applicants assert that the explicit disclosure of over 410 individual species (205 N-terminal deletion mutants and 205 C-

terminal deletion mutants disclosed on pages 29 to 33) that encode a polypeptide "at least 302 contiguous amino acids of SEQ ID NO:2" or that is "at least 906 contiguous nucleotides of SEQ ID NO:I" is sufficient to constitute a representative number of species for the claimed genus. The question at hand is not whether the genus of polypeptides comprising at least 302 contiguous amino acids of SEQ ID NO:2 is described. Starting with SEQ ID NO:2, one of skill in the art can conceive all possible polypeptides that comprise at least 302 contiguous amino acids of SEQ ID NO:2. The skilled artisan can also conceive of all polypeptides comprising at least 301 contiguous amino acids, and all polypeptides comprising 303 amino acids, and so forth to any length over the entire sequence. Although the specification explicitly discloses of over 410 individual species of polypeptide that comprise at least 302 contiguous amino acids of SEQ ID NO:2, it also explicitly discloses an even greater number of individual species of polypeptide that comprise less than 302 contiguous amino acids of SEQ ID NO:2 (pages 29-33). The introduction of claim changes which involve narrowing the claims by introducing elements or limitations which are not supported by the as-filed disclosure is a violation of the written description requirement of 35 U.S.C. 112, first paragraph. See, e.g., Fujikawa v. Wattanasin, 93 F.3d 1559, 1571, 39 USPQ2d 1895, 1905 (Fed. Cir. 1996) (a "laundry list" disclosure of every possible moiety does not constitute a written description of every species in a genus because it would not "reasonably lead" those skilled in the art to any particular species). The specification as filed did not teach or suggest that the property of comprising at least 302 contiguous amino acids of SEQ ID NO:2 is critical or preferred, nor is this limitation found anywhere in the specification. The first mention of "at least 302 contiguous amino acids" occurred when it was introduced in the

claim amendments filed 11/16/2006. Therefore, the limitations "at least 302 contiguous amino acids of SEQ ID NO:2" and "at least 906 contiguous nucleotides of SEQ ID NO: 1" are new matter not supported by the specification as filed.

Conclusion

13. Claims 41-50 and 55-60 are allowed.

14. Claims 51-54 are rejected.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel C Gamett, Ph.D., whose telephone number is 571 272 1853. The examiner can normally be reached on M-F, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback can be reached on 571 272 0961. The fax phone number for the organization where this application or proceeding is assigned is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DCG
Art Unit 1647
8 May 2007

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